

Work Order ID 153824

153824

Page 1

Friday, November 25, 2016 7:43:44 AM

Item ID: D2940-1

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Support

Start Date: 12/1/2016 Start Qty: 6.00

6

Cust Item ID:

Required Date: 12/8/2016 Req'd Qty: 6.00

6

Customer:

Reference:

DAS
21
9-89

Approvals:

Process Plan:

Date: NOV 30 2016

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool # Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D2940

C

100

0.07

100

HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

0.57

HAAS CNC vertical machine #1

1-Machine as per Folio FA079
2-DeburrDAS
33
9-89

B.P 16/12-23

16/12/24

DAS
14
9-89

16/12/20

110

0.00

110

QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.01

Quality Control

DAS
33
9-89

B.P 16-12-23

1

16/12/24

120

0.00

120

QC8- Inspect parts - second check

QC

Memo

0.02

Quality Control

6 J17-1-6

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____	
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

Friday, November 25, 2016 7:43:44 AM

Item ID: D2940-1

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Support

Start Date: 12/1/2016 **Start Qty:** 6.00 ***6***

Cust Item ID:

Required Date: 12/8/2016 **Req'd Qty:** 6.00 ***6***

Customer:

Reference:

Run Start *NR1*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop *NR2*

OC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

130

0.00

130

0.07

HandFXtube

Memo

Hand Finishing Crosstubes

Per note 8 on page 1 of dwg D2940, Prep inner concave surface of support and apply 3M Scotch-Weld as per dwg. *BT 135205*
24h of cure time.

140

QC5- Inspect part completeness to step on W/O	0.00
---	------

0.00

140

0.02

QC

Memo

Quality Control

170

Identify as per dwg & Stock Location:_____ 0.00

0.00

170

0.01

Packaging

Memo

Packaging

LOCATION : LG052

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐				
Misidentified ☐	Past Due ☐	OTHER :			

Work Order ID 153824***153824***

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Friday, November 25, 2016 7:43:44 AM

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Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

NR1

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

180

QC21- Final Inspection - Work Order Release

0.00

180

QC

Memo

0.10

Quality Control

JAN 10 2017

DAS
21
9-89mf
17-1-10

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation		Disposition			
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER :			

Picklist Print

Friday, November 25, 2016 7:43:44 AM

Page 1

Work Order ID: 153824

153824

Parent Item: D2940-1

D2940-1

Parent Item Name: Support

Start Date: 12/1/2016

Required Date: 12/8/2016

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP C 02.11.26 Reformat; Added P/OKJ
IPP Rev:D Added priming as per Rev B 07-04-30 JLM
IPP E 08.03.19 Re-format Ec verified by DD
IPP Rev:F 08-10-22 add qc14 DD verified by:EC
11.08.04 as per dwg rev.C DD verf:EC
IPP Rev:G

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
DSK081		Manufactured	No			110	Each	7.0000	0.5	4			

DSK081

D2940-1 Turning Detail

B-a 16-12-19

Location

Loc Qty

Loc Code

MAT060

7

→ 149198

1

→ 151723

6

1.0

2.0

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐							
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval			
Description Work Order Deviation				Disposition							
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐									
		OTHER : ☐									

DART AEROSPACE LTD		Work Order: 153824
Description: Ø3.250 Support		Part Number: D2940-1
Inspection Dwg: D2940	Rev: C	Page 1 of 1

FIRST ARTICLE INSPECTION DIMENSION SHEET

☒ First Article ☐ Prototype

				Record Actual Dimensions				
Dim	Min	Max	Go/No Go Gauge	1	2	3	4	5
HAAS Section								
AA	0.240	0.260		0.250	0.250	0.250	0.250	0.250
AB	0.490	0.510		0.500	0.500	0.500	0.500	0.500
AC	0.140	0.160		0.150	0.150	0.150	0.150	0.150
AD	3.510	3.530		3.522	3.520	3.520	3.520	3.522
AE	1.633	1.673		1.660	1.661	1.663	1.664	1.667
AF	1.493	1.513		1.503	1.506	1.507	1.506	1.510
AG	0.040	0.060		0.048	0.051	0.050	0.049	0.045
AH	0.188	0.193		0.189	0.189	0.189	0.189	0.189
AI	0.140	0.160		0.146	0.147	0.147	0.147	0.148
AJ	2.518	2.538		2.537	2.537	2.537	2.537	2.537
AK	0.040	0.060		0.050	0.050	0.050	0.050	0.050
AL	0.010	0.020		0.010	0.010	0.010	0.010	0.010
AM	0.140	0.160		0.149	0.149	0.149	0.149	0.149
AN	0.350	0.450		0.350	0.350	0.350	0.350	0.350
AO	0.240	0.260		0.250	0.250	0.250	0.250	0.250
AP	0.150	0.170		0.158	0.157	0.158	0.159	0.158
AQ	0.053	0.073		0.063	0.063	0.063	0.063	0.063
AR	101.64	105.64		103.64	103.64	103.64	103.64	103.64
AS	0.260	0.267		0.262	0.262	0.262	0.262	0.262
AT	0.053	0.073		0.063	0.063	0.063	0.063	0.063
AU	4.118	4.138		4.130	4.130	4.130	4.130	4.130
AV								
AW								
Accept/Reject				✓	✓	✓	✓	✓

Measured by: B. O.	DAS 08 9-89	DAS 33 9-89	Date: 16-12-23
Audited by: JL			Date: 16/12/24
Prototype Approval:			Date:

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	
B	07.05.08	Dwg Rev. updated	KJ/JLM	
C	07.07.18	Dimension AS revised	KJ/JLM	
D	08.04.22	Reformat	KJ/JLM	
E	12.01.31	Dwg Rev. updated	KJ	

DART AEROSPACE LTD		Work Order: 153824
Description: Ø3.250 Support		Part Number: D2940-1
Inspection Dwg: D2940	Rev: C	Page 1 of 1

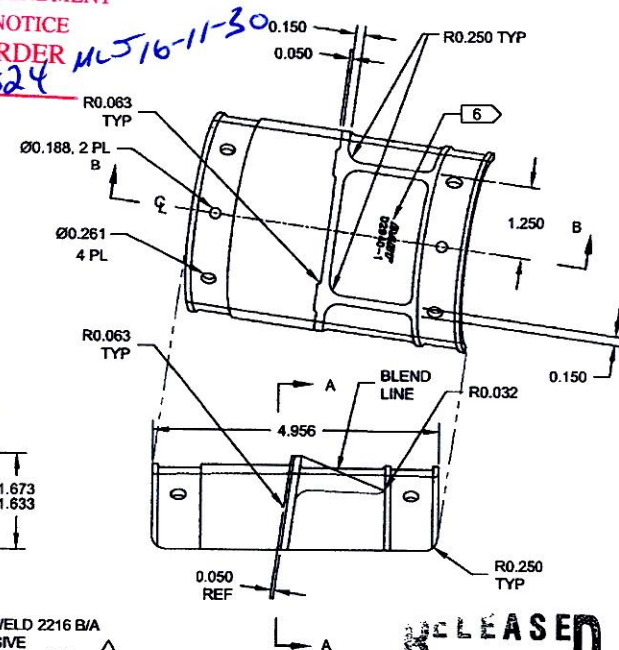
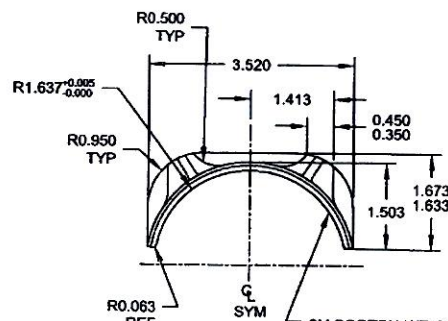
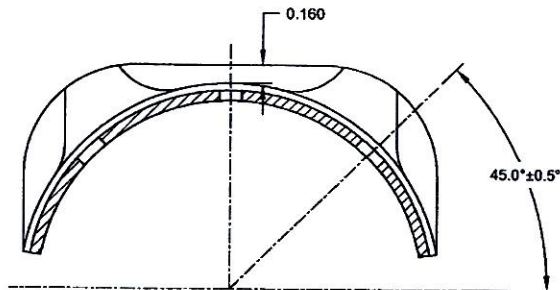
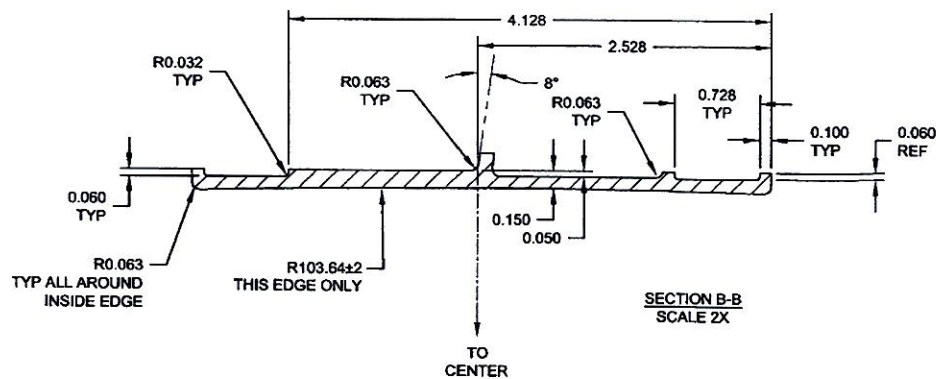
FIRST ARTICLE INSPECTION DIMENSION SHEET

☒ First Article ☐ Prototype

Dim	Min	Max	Go/No Go Gauge	Record Actual Dimensions				
				16	1	13	14	5
HAAS Section								
AA	0.240	0.260		0.250				
AB	0.490	0.510		0.500				
AC	0.140	0.160		0.150				
AD	3.510	3.530		3.522				
AE	1.633	1.673		1.665				
AF	1.493	1.513		1.504				
AG	0.040	0.060		0.050				
AH	0.188	0.193		0.190				
AI	0.140	0.160		0.148				
AJ	2.518	2.538		2.537				
AK	0.040	0.060		0.050				
AL	0.010	0.020		0.010				
AM	0.140	0.160		0.149				
AN	0.350	0.450		0.350				
AO	0.240	0.260		0.250				
AP	0.150	0.170		0.158				
AQ	0.053	0.073		0.065				
AR	101.64	105.64		103.64				
AS	0.260	0.267		0.262				
AT	0.053	0.073		0.063				
AU	4.118	4.138		4.130				
AV								
AW								
Accept/Reject				✓				

Measured by: DAS 33	Date: 11/11/24
Audited by: 9-89 JL	Date: 17-1-6
Prototype Approval:	Date:

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	
B	07.05.08	Dwg Rev. updated	KJ/JLM	
C	07.07.18	Dimension AS revised	KJ/JLM	
D	08.04.22	Reformat	KJ/JLM	
E	12.01.31	Dwg Rev. updated	KJ	



NOTES:

- 1) MATERIAL: 17-4 PH STAINLESS STEEL, H900 OR H925 CONDITION
MIN UTS = 170 KSI (38 HRc)
(REF DART SPEC. D6104)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 (REF X.XXX = ±0.010) UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: DART LOGO (PER DART SUPPLIED GRAPHIC) AND PART NUMBER IN THIS AREA WITH 0.125 HIGH LETTERING 0.010-0.020 DEEP, PER DART QSI 044 6.3.
- 7) WEIGHT: 0.92 lb
- 8) FOR THE ENTIRE INNER CONCAVE SURFACE:
ABRADE SURFACE WITH 400-GRIT SANDPAPER. REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY 0.03" TO 0.05" THICK LAYER OF 3M SCOTCH-WELD 2216 B/A ADHESIVE TO MATING SURFACE OF SUPPORT. ALLOW TO CURE FOR 24 HOURS.

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 153824

D2940-1 SUPPORT

C	RMV FINISH, ADD 3M 2216, ADD H925 MAT'L OPTION	CP	11.07.15
B	UPDATE PER NCR 642, PRIME INSIDE	PH	07.03.13
A	NEW ISSUE	CP	01.01.10
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	11.07.15		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. D2940
TITLE Ø3.250 SUPPORT
REV. C
SHEET 1 OF 1
SCALE NTS

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